УДК 547

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VARIOUS PARAMETERS THAT EFFECT ON SILANIZATION OF HALLOYSITE NANOTUBES BY USING (3-GLYCIDYL OXYPROPYL) TRIMETHOXY SILANE*

Keywords: Halloysite, nano clay, Organosilanes, solvent nature.

Functionalization of halloysite nanotubes surface by using organosilanes is sensitive to the reaction conditions [1, 2]. Halloysite nanotubes (HNTs) were modified using (3-Glycidyloxypropyl) trimethoxy silane (GOPTMS). The experiments were performed under different reaction conditions including, various solvents [Toluene, Tetrahydrofuran (THF), Ethanol, n-Hexane, 1,4 Dioxane and Acetonitrile], water content in the reaction media (13,92 mmol and 37,6 mmol), volume of solvent (10, 40 and 80 ml), number of moles of silane (4.7, 6.3 mmol) and ammonia solution as base catalyst. The elemental analysis, FT-IR analysis were used to identify the samples which attained the highest percent of functionalization. SEM image and thermogravimetric analysis were provided for the pristine halloysite nanotubes and the best modified halloysite nanotubes samples.

References

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** The work was supported by RFBR grants 18-29-12129mk.*